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EXAMINER

AVELLINO, JOSEPH E

ART UNIT	PAPER NUMBER
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2143

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/684,742

Applicant(s)

GELVIN ET AL.

Examiner

Joseph E. Avellino

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-56 are presented for examination with claims 1, 46, 48-51, 54, and 56 independent.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Double Patenting

3. The terminal disclaimer filed on February 2, 2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Patent no. 6,735,630 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 5-6, 8, 14-16, 18, 24, 34, 39-41, 43-45, 48, 49 and 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clare et al. (USPN 6,414,955)

(hereinafter Clare) in view of Kail, IV (USPN 6,225,901) (cited in previous Office Action as pertinent prior art) (hereinafter Kail).

4. Referring to claim 1, Clare discloses a method for providing a sensor network comprising:

coupling a plurality of network elements (i.e. member nodes) including a plurality of node types (user interface nodes and sensor nodes, see Figure 14, and col. 14, lines 12-34) among at least one environment (it is inherent that in a sensor network there must be an environment since then the sensors will be able to record data regarding their surroundings) and at least one user (user node), wherein the plurality of node types includes at least one node of a first type (user node) and at least one node of a second type (sensor node) (Figure 14; col. 14, lines 12-34);

the first type of node includes a sensor (col. 14, lines 12-34);

remotely controlling at least one function of the plurality of node types (col. 15, lines 13-16);

collecting data from the at least one environment (col. 6, lines 19-21);

providing node resource information (identity, location, communication and interference neighbors, etc.) from the at least one node of a second type to the plurality of network elements (col. 14, lines 12-17);

distributing storage and processing of the collected data among the plurality of network elements in response to the node information (col. 18, lines 35-64).

Clare does not specifically disclose distributing storage and processing of the collected data from the first node type to the second node type second element. In analogous art, Kail discloses another remote sensor monitoring system which discloses sensor interface unit is configured to transmit that sensor's data via a communications network to a central monitoring device local to the node (the Office construes the term "local" as "logically reachable by the first node") (e.g. abstract; Figure 2). It would have been obvious to one of ordinary skill in the art to combine the teaching of Kail with Clare in order to utilize high computational computers to analyze the sensor data, resulting in reduced complexities of the sensor devices and increasing the feasibility of upgrades or replacements.

5. Referring to claim 2, Clare discloses performing a first type of data manipulation by the at least one node of a first type (i.e. filters and analyzes the stored data by the sensor node) (col. 18, lines 42-44), and performing a second type of data manipulation by the at least one node of a second type (manipulate the data such that the data is outputted to a user through a display device or audio speaker, etc) (col. 16, lines 4-16).

6. Referring to claim 3, Clare discloses automatically organizing the plurality of network elements in response to the node information, wherein the automatic organizing comprising automatically controlling data transfer (i.e. routing data to user terminals), processing (i.e. using user profiles to generate a warning based on sensor

data), and storage among the plurality of network elements (storing the data in data buffers (col. 16, lines 17-27; col. 18, lines 35-64).

7. Referring to claim 5, Clare discloses controlling data processing using at least one processing hierarchy (i.e. prioritization of messages), the at least one processing hierarchy controlling communications among the plurality of network elements (col. 15, lines 10-24).

8. Referring to claim 6, Clare discloses comprising self-assembling the plurality of network elements, wherein search and acquisition modes of the at least one node of a second type search for participating ones of the plurality of network elements, whether each of the participating ones of the plurality of network elements are permitted to join the sensor network using a message hierarchy, wherein the sensor network is surveyed at intervals for new nodes and missing nodes (col. 8, line 49 to col. 10, line 51).

9. Referring to claim 8, Clare discloses the at least one function includes data acquisition (i.e. turn sensors to highest alert activity) (col. 15, lines 10-15).

10. Referring to claim 14, Clare discloses controlling data processing, transmission, and storage among the plurality of network elements in response to a decision probability of a detected event (i.e. power down for five minutes transmitted to the node from the user) (col. 15, lines 13-15).

11. Referring to claim 15, Clare discloses performing processing of the collected data in response to parameters established by a user (col. 18, lines 50-64).

12. Referring to claim 16, Clare discloses the processing is performed in response to at least one result of the energy detection (col. 18, lines 50-64).

13. Referring to claim 18, Clare discloses the processing comprises selecting at least one data type for processing, selecting at least one processing type, selecting at least one of the plurality of network elements to perform the selected at least one processing type, and transferring the selected at least one data type to the selected at least one of the plurality of network elements using at least one route through the sensor network (col. 18, lines 35-64).

14. Referring to claim 19, Clare discloses the selection of at least one processing type comprises determining at least one probability (i.e. decision-making) associated with a detected event (monitored environment settings) and selecting at least one processing type in response to the at least one probability (i.e. if the decision is true, do something different than if the decision is false) (Figure 15; col. 18, lines 35-64).

15. Referring to claim 24, Clare discloses the communication mode is wireless communication (e.g. abstract).

16. Referring to claim 34, Clare discloses establishing at least one redundant information pathway among the plurality of network elements (Figure 8).

17. Referring to claim 39, Clare discloses at least one node of a first type and at least one node of a second type include at least one sensor selected from a group consisting of seismic, acoustic, infrared, thermal, force, vibration, pressure, humidity, current, voltage, magnetic, biological, chemical, acceleration, and visible light sensors (col. 14, lines 12-34).

18. Referring to claim 40, Clare discloses at least one of the plurality of network elements determines a position of at least one other of the plurality of network elements (col. 8, lines 15-25).

19. Referring to claim 41, Clare discloses transferring software among the plurality of network elements, wherein the software transfer is remotely controllable (col. 15, lines 10-24).

20. Referring to claim 42, Clare discloses the invention substantively as described in claim 1. Clare does not specifically state protecting communications among the elements using a public key security protocol. "Official Notice" is taken that both the concept and advantages of providing for public key encryption in wireless devices is

well known and expected in the art. It would have been obvious to one of ordinary skill in the art to include public key encryption to the system of Clare to provide a basic level of security, thereby reducing the occurrences of eavesdropping by hackers and malcontents.

21. Referring to claim 43, Clare discloses determining at least one position of one of the network elements using location information from GPS device (col. 7, line 58 to col. 8, line 6).

22. Referring to claim 44, Clare discloses the plurality of node types comprise sensor nodes (e.g. abstract; Figure 14).

23. Referring to claim 45, Clare discloses supporting short range and long range communications among the plurality of network elements (Figure 1).

24. Claims 48, 49, and 52-56 are rejected for similar reasons as stated above.

Claims 4, 17-20, 23, 25-32, 46, 47, 50, and 51, are rejected under 35 U.S.C. 103(a) as being unpatentable over Clare in view of Kail in view of Myer et al. (USPN 6,615,088) (hereinafter Myer).

25. Referring to claim 4, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose supporting a plurality of levels of synchronization among different subsets of the plurality of network elements. Myer discloses that the master controller 36 can periodically poll each appliance 37-39 in order to obtain the status of the device (col. 3, lines 15-22). Furthermore, it is well known that polling periods can be user defined to utilize slow status-changing devices (light switches are slow to change status compared to acoustic sensors in a room, thereby requiring a different level of synchronization for the light switch than for the acoustic sensor). By this rationale it would have been obvious to one of ordinary skill in the art to modify the teachings of Clare and Myer to provide for multiple levels of synchronization to reduce wasted bandwidth on status updates for devices which have a slow status change interval.

26. Referring to claims 17, 20-23, Clare in view of Kail discloses the invention substantively as described in claim 18. Clare in view of Kail does not specifically disclose aggregating data processed in a plurality of nodes for further processing by other nodes. Myer discloses polling devices by the master controller 36 in order to monitor the devices status, which can then be sent to a user interface device for display (the device status reports collected by the master controller 36 must inherently be processed by the client GUI device, or other node, in order for it to be displayable to the user) (col. 3, lines 15-25). It would be obvious to a person of ordinary skill in the art at

the time the invention was made to combine the teaching of Myer with Clare to facilitate device configuration in a network as supported by Myer (col. 1, lines 26-30).

27. Referring to claim 25, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not specifically disclose the network includes a gateway, a server, and at least one hybrid wired and wireless network. Myer discloses another sensor network which includes at least one gateway 12, at least one server 25, and at least one hybrid wireless and wired network (Figure 1; col. 2, lines 52-67). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Myer with Clare to facilitate device configuration in a network as supported by Myer (col. 1, lines 26-30).

28. Referring to claim 26, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not specifically disclose the network is the Internet. Myer discloses the network is the Internet 22, (Figure 1). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Myer with Clare to facilitate device configuration in a network as supported by Myer (col. 1, lines 26-30).

29. Referring to claim 27, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose providing remote accessibility using WWW-based tools to data, code, management, and security

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functions. Myer discloses providing remote accessibility using WWW-based tools to data, code, management, and security functions (Figure 2). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Myer with Clare to facilitate device configuration in a network as supported by Myer (col. 1, lines 26-30).

30. Referring to claim 28, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose the at least one gateway performs management of communications with at least one remote user. Myer discloses the at least one gateway (control network portal 12) performs management of communications with at least one remote user (col. 4, lines 28-50). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Myer with Clare to facilitate device configuration in a network as supported by Myer (col. 1, lines 26-30).

31. Referring to claim 29, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose comprising at least one database separate from the plurality of network elements. Myer discloses comprising at least one database separate from the plurality of network elements (col. 3, lines 45-50). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Myer with Clare to facilitate device configuration in a network as supported by Myer (col. 1, lines 26-30).

32. Referring to claim 31, Clare in view of Kail in view of Myer discloses the invention substantively as described in claim 29. Claire further discloses data-driven alerting methods that recognize conditions on user-defined data relationships (i.e. user profiles) including coincidence in signal arrival, node power status, and network communication status (col. 18, lines 35-64).

33. Referring to claim 32, Clare in view of Kail in view of Myer discloses the invention substantively as described in claim 29. Although neither Clare nor Myer specifically state implementing the database in a small footprint database and in a SQL database systems at a level of at least one server, it is well known that these features exist and would have been obvious to one of ordinary skill in the art to incorporate a small footprint database to the invention of Clare and Myer to provide the productivity and reliability that a SQL database allows, while still keeping information search and retrieval times to a minimum.

34. Claims 30, 46, 47, 50 and 51 are rejected for similar reasons as stated above.

Claims 7, 9-13, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clare in view of Kail in view of Humpleman et al. (USPN 6,546,419) (hereinafter Humpleman).

35. Referring to claim 7, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose managing the plurality of network elements as a distributed database using a distributed resource management protocol, wherein the plurality of network elements are reused among different applications, wherein the network elements are used in multiple classes of applications. Humpleman discloses managing the plurality of network elements as a distributed database using a distributed resource management protocol, wherein the plurality of network elements are reused among different applications, wherein the network elements are used in multiple classes of applications (the servers and clients can reside on the same node and execute both client and server applications) (col. 6, lines 18-34). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Clare with Humpleman to be able to control a plurality of diverse devices having different capabilities to communicate in order to accomplish tasks or to provide a service as supported by Humpleman (col. 2, lines 38-45).

36. Referring to claim 9, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose having the node of the first type containing a preprocessor with a state machine, an API and at least one sensor. Humpleman discloses a home sensor network wherein a first node 14 of a first type (Device A) contains a preprocessor with a state machine (it is inherent that a standard microprocessor emulates the effects of a state machine during its pipelining of instructions, fetch, decode, execute, store, etc.), an API (INTERFACE-A.xml), and at

least one sensor (h/w) (e.g. abstract; Figure 16; col. 22, lines 52-58). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Clare with Humpleman to be able to control a plurality of diverse devices having different capabilities to communicate in order to accomplish tasks or to provide a service as supported by Humpleman (col. 2, lines 38-45).

37. Referring to claim 10, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose having the node of the second type including at least one preprocessor coupled to at least one processor and a plurality of API's, wherein the plurality of API's are coupled to control at least one device. Humpleman discloses a home sensor network wherein the node 14 of the second type (device B), contains at least one preprocessor coupled to at least one processor (it is well known that a server computer has multiple microprocessors embedded within the server which are either directly or indirectly coupled together), a plurality of API's (INTERFACE-A.XML and INTERFACE-B.XML), wherein the plurality of API's are coupled to control at least one sensor device (i.e. smoke detectors) (e.g. abstract; Figure 16; col. 22, lines 52-58). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Clare with Humpleman to be able to control a plurality of diverse devices having different capabilities to communicate in order to accomplish tasks or to provide a service as supported by Humpleman (col. 2, lines 38-45).

38. Referring to claim 11, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose layering the plurality of API's. Humpleman discloses layering the plurality of API's in the device (Figure 19, reference characters 72-92). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Clare with Humpleman to be able to control a plurality of diverse devices having different capabilities to communicate in order to accomplish tasks or to provide a service as supported by Humpleman (col. 2, lines 38-45).

39. Referring to claim 12, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare further discloses enabling distributed resource management by providing network resource information and message priority information to the plurality of network elements (col. 14, lines 12-34; col. 15, lines 10-25). Clare does not specifically disclose enabling distributed resource management through the plurality of API's. However Humpleman discloses using the API's to enable distributed resource management (i.e. enabling services to be used via the API's) (Figures 15-19 and pertinent portions of the disclosure). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Clare with Humpleman to be able to control a plurality of diverse devices having different capabilities to communicate in order to accomplish tasks or to provide a service as supported by Humpleman (col. 2, lines 38-45).

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40. Referring to claim 13, Clare discloses the preprocessor (ADC) performs data acquisition, and the processor (DSP) performs signal identification (col. 18, lines 35-64).

41. Referring to claim 33, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose the node of a second type includes sensing, processing, communications, and storage devices supporting a plurality of processing and protocol layers. In analogous art, Humpleman discloses another sensor network wherein nodes include supporting a plurality of processing and protocol layers (col. 14, lines 20-34). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Clare with Humpleman to be able to control a plurality of diverse devices having different capabilities to communicate in order to accomplish tasks or to provide a service as supported by Humpleman (col. 2, lines 38-45).

42. Referring to claims 35 and 36, Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose a first network having a first node density is assembled using the at least one node of a first type, and a second node having a second node density is assembled using the at least one node of a second type, wherein the second network is overlayed onto the first network. Humpleman discloses a home sensor network wherein numerous sensors relating to different "services" (i.e. HVAC, security, utility, appliances) are overlayed onto another (i.e. they are all connected to one network, however they are considered their

separate entities) (col. 22, line 17 to col. 23, line 7). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Clare with Humpleman to be able to control a plurality of diverse devices having different capabilities to communicate in order to accomplish tasks or to provide a service as supported by Humpleman (col. 2, lines 38-45).

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare in view of Kail in view of Davis et al. (USPN 5,742,829) (hereinafter Davis).

43. Clare in view of Kail discloses the invention substantively as described in claim 1. Clare in view of Kail does not disclose distributing code and data anticipated for future use through the sensor network using low priority messages, wherein the code and the data are downloadable from a storage device. Davis discloses a network wherein distributing code and data anticipated for future use through the sensor network using low priority messages (i.e. in the background), wherein the code and the data are downloadable from a storage device (it is inherent that the code/data are downloaded from a storage device) (col. 6, lines 27-65). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Davis with Clare to facilitate the installation of software on heterogeneous clients on the distributed network, thereby reducing installation costs and reducing downtime as supported by Davis (col. 2, lines 10-15).

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare in view of Kail in view of Makansi et al. (US 2002/0154631) (hereinafter Makansi).

44. Clare in view of Kail discloses the invention substantively as described in claim 1. Furthermore it is an inherent feature of Clare to aggregate the data to be transmitted to a user to conserve energy by reducing the amount of packets and saving bandwidth. Clare does not disclose the message packets include decoy packets wherein information to be transferred is impressed on random message packets to provide communication privacy. Makansi discloses message packets include decoy packets wherein information to be transferred is impressed on random message packets to provide communication privacy on a network (e.g. abstract). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Makansi with Clare to provide messages to be transmitted in ways such that potential adversaries are given access to a relatively little amount of information as supported by Makansi (p. 1 ¶ 8).

Response to Arguments

45. Applicant's arguments filed February 2, 2007 have been fully considered but they are not persuasive.

46. In the remarks, Applicant argues, in substance, that (1) Kali does not disclose transferring data to another of the plurality of elements local to the at least one node of a first type, rather Kali discloses remotely monitoring data.

47. As to point (1), Applicant has not sufficiently defined what is meant by an element "local to the at least one node", and as such intends broad interpretation. The Office construes the term "local to the node" as any node which is logically connected to the first node. By this rationale, Kali clearly discloses a node "local to the at least one node", since the node is capable of remote monitoring. Furthermore, as shown in Figure 2, one of ordinary skill in the art would understand that the other device (i.e. central monitoring device 14a can be construed as "local" to the portable monitoring unit 12 since it is within the same network. By this rationale, the rejection is maintained.

Conclusion

48. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

49. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

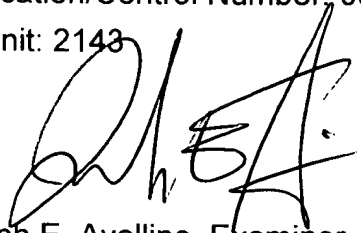
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

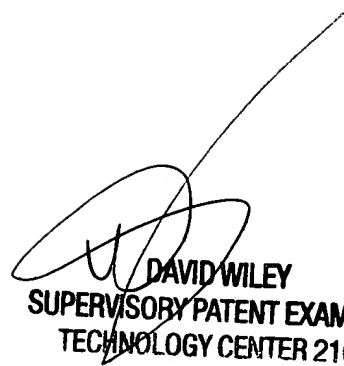
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A handwritten signature in black ink, appearing to read 'J. E. Avellino', written over the printed name.

Joseph E. Avellino, Examiner
February 20, 2007

A handwritten signature in black ink, appearing to read 'David Wiley', written over the printed name.

DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100